

Appendix B
Clean Version of
Claims 4, 7, 10~12, 14 and 15
(With amendments incorporated)

A1 4. (once amended) A stabilized AlPO_4 composition having a β cristobalite structure, and comprising XO, SiO_2 and AlPO_4 at a ratio of greater than 0 to less than about 4 mole percent XO, greater than 0 to less than about 10 mole percent SiO_2 , and greater than about 86 to less than about 100 mole percent AlPO_4 , wherein X is any cation with an atomic radius of about 1 angstrom that fits stably within the interstices of the cristobalite structure.

7. (once amended) A method for stabilizing AlPO_4 ceramic microstructures comprising the steps of:

A2 a) admixing an acidic solution of AlPO_4 to solutions of SiO_2 and a calcium oxide source wherein the mole percent ratios are greater than about 86 to less than about 100 AlPO_4 , greater than 0 to less than about 10 SiO_2 , and greater than 0 to less than about 4 calcium oxide source;

b) forming a slurry from the admixture formed in step (a);

c) removing water from the slurry formed in step (b) to form a precipitate; and

d) heating the precipitate.

A3 10. (once amended) The method of Claim 7, 8 or 9 wherein the mole percent ratios are 0 to about 3 calcium oxide source, 0 to about 6 SiO_2 , and about 91 to about 100 AlPO_4 .

11. (once amended) The method of Claim 7, 8 or 9 wherein the mole percent ratios are about 2.3 calcium oxide source, about 5.7 SiO_2 , and about 92 AlPO_4 .

12. (once amended) A single phase, cristobalite AlPO_4 composition that has a cubic structure, space group F-43m, with a ~ 7.2 Angstroms at a temperature of less than about 270°C.

14. (once amended) A composition according to Claim 12 comprising a silica dopant, and a dopant having a cation with an atomic radius of about 1 angstrom that fits stably within the interstices of the cristobalite structure.

15. (once amended) A composition according to Claim 14 wherein the dopant having a cation with an atomic radius of about 1 angstrom that fits stably within the interstices of the cristobalite structure is CaO .
